

GeoComputation 2011

[Andy Turner](#)

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 - <http://bit.ly/nIKMyB>
- These are notes from the [GeoComputation 2011](#) Conference taking place from 2011-07-19 to 2011-07-22 in London.
 - These are personal notes which are publicly available
 - I will do my best not to invade others privacy and be constructive in my note taking

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1. Documentation

- The GeoComputation 2011 Web Site
 - <http://standard.cege.ucl.ac.uk/workshops/Geocomputation/>
- Route to the reception
 - <http://crf.casa.ucl.ac.uk/screenRoute.aspx?s=386&d=135&w=False>
- Preceding STDM conference which has a joint social with GeoComputation2011 on 2011-07-19
 - http://standard.cege.ucl.ac.uk/workshops/PDF_Files/STDM_Programme.pdf
- The conference journal
 - http://www.elsevier.com/wps/find/journaldescription.cws_home/304/description#descriptionISI
- Programme
 - http://standard.cege.ucl.ac.uk/workshops/PDF_Files/Geocomp_Programme.pdf

2. Preparation

- University of Leeds, School of Geography Newsletter Item
 - Luke Burns, [Andy Evans](#), Alison Heppenstall, [Nick Malleson](#) and [Andy Turner](#) are heading down to London next week for [GeoComputation 2011](#). Check the usual channels for communication and liaison while the event unfolds. Alison is presenting a paper titled 'Creating realistic synthetic populations at varying spatial scales: A comparative critique of population synthesis techniques' which is co-authored with Kirk Harland, Dianna Smith and Mark Birkin. She is also presenting a poster titled 'Building a Web-based Cancer Atlas for Saudi Arabia' which is co-authored with K. Al-Ahmadi, [Linda See](#) and A. Al-Zahrani. Nick is presenting a paper titled 'Microsimulation to Explore Crime Patterns' which is co-authored with Mark Birkin. [Andy](#) is presenting a paper titled 'Putting the Geographical Analysis Machine on the Internet (Revisited)' co-authored with [Ian Turton](#) (see the [submitted abstract](#) for a synopsis)
- Microblogging
 - I wonder if there is an official conference hashtag...
 - [Twitter](#)
 - <http://twitter.com/#!/search?q=%23GeoComp11>
 - Heading to GeoComputation 2011 #GeoComp11 representing the CCG and working with @ijturton my blognotes are available via <http://t.co/UZTPUHw>
 - <http://twitter.com/#!/agdturner/status/93297307914739712>
 - [identi.ca](#)
 - Heading to GeoComputation 2011 #GeoComp11 representing the CCG. My blognotes are available via <http://bit.ly/nlKMyB>
 - <http://identi.ca/notice/79174937>
- See also: [4. Ian Turton and Andy Turner Contribution](#)
- ...

3. People

- There is a paper participants list, but it is more of an attendance list as [Ian Turton](#) is not listed, but then there may be some listed that do not attend...
- Attendees
 - [Muhammad Adnan](#)
 - [Fábio Afonso](#)
 - [Berk Anbaroglu](#)
 - [Clio Andris](#)
 - [Ellen-Wien Augustijn](#)
 - [Mike Batty](#)
 - [Luke Burns](#)
 - [Chris Brunsdon](#)
 - [Tao Cheng](#)

- [James Cheshire](#)
 - <http://www.jamescheshire.co.uk>
- [Andy Chow](#)
- [Emeka Chukwusa](#)
- [Keith Clarke](#)
- [Jamison Conley](#)
- [Alexis Comber](#) (Lex)
- [Ricardo Crespo](#)
- [Andrew Crooks](#)
- [Mike de Smith](#)
- [Claire Ellul](#)
 - <http://ucl.academia.edu/ClaireEllul>
- [Andy Evans](#)
- [Peter Foley](#)
- [Stewart Fotheringham](#)
- [Muki Haklay](#)
 - <http://twitter.com/#!/mhaklay>
- [Glen Hart](#)
- [Alison Heppenstall](#)
- [Mark Horner](#)
- [Zbynek Janoska](#)
- [Bin Jiang](#)
- [Mikhail Kanevski](#)
- [Christian Kreis](#)
- [Shawn Laffan](#)
- [Yang Li](#)
- [Jingyi Lin](#)
- [Paul Longley](#)
- [Nick Malleson](#)
- [Ed Manley](#)
- [Peter Nijkamp](#)
 - http://standard.cege.ucl.ac.uk/workshops/Geocomputation/spr_nijkamp.html
- [Toshihiro Osaragi](#)
- [Colin Robertson](#)
- [Tyng-Rong Roan](#)
- [Alexandre Santacru](#)
- [Linda See](#)
- [Alex Singleton](#)
- [Emmanouil Tranos](#)
- [John Tsapakis](#)
- [Andy Turner](#)
- [Dawn Williams](#)
 - <http://uk.linkedin.com/pub/dawn-williams/30/720/56a>

- [Jo Wood](#)
 - http://standard.cege.ucl.ac.uk/workshops/Geocomputation/spkr_wood.html
- [Yihong Yuan](#)
- [Raul Zurita-Milla](#)
- ...

- Significant others
 - [Michal Bil](#)
 - [Mark Birkin](#)
 - [Martin Charlton](#)
 - [Mike Goodchild](#)
 - [James MacGill](#)
 - [Stan Openshaw](#)
 - [Ian Turton](#)
 - ...

4. Ian Turton and Andy Turner Contribution

- <https://code.google.com/p/spatial-cluster-detection/>
- Abstract
 - https://docs.google.com/document/d/1ehXcwFAz7Sictjb28LBA1Qx6Dk65FjK7aDrZ1qultjA/edit?hl=en_US
- Alternative abstract
 - https://docs.google.com/document/d/1gRsy9ct5EO0qjDJ6CngS7dUbhZRrOJtCC9aHTsQG_E/edit?hl=en_US
- Presentation slides
 - https://docs.google.com/viewer?a=v&pid=explorer&chrome=true&srcid=0B9v3K0q9iX7kNjI0ZmQ4Y2MtY2Y4OS00MTU1LTk5NjYtMjY3ODYxZGExMjk3&hl=en_US
 - These are probably the final version...
 - [\(Draft Slides from 2011-07-20 11am GMT\)](#)
- Full paper
 - ...
- References and further reading
 - [Stan Openshaw](#) wrote a lot and so did his colleagues
 - It is all worth reading and I am reading it all
 - For Stan I am compiling a bibliography of all his works in preparation for a celebration of his work in April 2012
 - Check out the [Stan Openshaw Collection](#) by clicking on the image of Stan or go direct to <http://www.ccg.leeds.ac.uk/people/s.openshaw/collection/contents.html>
 - <http://www.ccg.leeds.ac.uk/projects/smart/>
 - With respect to this work, the following are key texts:
 - ...
 - Openshaw S., Craft A.W. (1989) Some recent developments of the geographical analysis machine. In Elliot P. (ed.) Methodology of Enquiry into Disease Clustering, SASHSU, London, p 35-39.
 - Openshaw S., Wilkie D., Binks K., Wakeford R., Gerrard M.H., Croasdale M.R. (1989) A method of detecting spatial clustering of disease. In Crosbie W.A., Gittus J.H. (eds.) Medical Response to the Effects of Ionising Radiation. Elsevier Applied Science, London, pages 295-308.

- Openshaw S., Charlton M.E., Craft A.W., Birch J.M. (1988) Investigation of leukemia clusters by use of a geographical analysis machine. The Lancet, Volume 331, Issue 8580, 1988-02-06. doi:10.1016/S0140-6736(88)90352-2.
- Openshaw S., Charlton M.E., Craft A.W. (1988) Searching for cancer clusters using a geographical analysis machine. Papers and proceedings of the Regional Science Association.
- Openshaw S., Charlton M.E., Wymer C., Craft A.W. (1987) A Mark 1 Geographical Analysis Machine for the automated analysis of point data. International Journal of Geographical Information Science Volume 1, Issue 4, pages 335-358. DOI: 10.1080/02693798708927821 <http://www.informaworld.com/openurl?genre=article&issn=1365-8816&volume=1&issue=4&spage=335> <http://dx.doi.org/10.1080/02693798708927821>.
- Openshaw S. (1993) GIS 'crime' and GIS 'criminality'. Environment and Planning A, volume 25, number 4, pages 451-458.
- Brunsdon C., Charlton M. (2010) An assessment of the effectiveness of multiple hypothesis testing for geographical anomaly detection (<http://www.envplan.com/epb/fulltext/b38/b36093.pdf>).
- Conley J., Gahegan M., Macgill J. (2005) A genetic approach to detecting clusters in point datasets. Geographical Analysis, volume 37, pages 286-314.

5. 2011-07-19 Notes

- [Mike Batty](#) Key Note
 - <http://www.complexcity.info>
 - <http://new.oobrien.com/rankclocks>
 - <http://jmichaelbatty.files.wordpress.com/2011/06/batty-complexity-2010.pdf>
 - Feedback
 - Power laws
 - What defines a power law?
- [Chris Brunsdon](#) tells me of this paper he and [Martin Charlton](#) wrote in Environment and Planning B
 - It helps with the statistical argument of multiple testing issues with GAM statistical filtering
 - We had a good chat about it, and the statisticians are now a lot calmer preferring to talk of evidence over significance testing and proof
 - Abstract
 - <http://www.envplan.com/abstract.cgi?id=b36093>
 - Brunsdon C., Charlton M. (2010) An assessment of the effectiveness of multiple hypothesis testing for geographical anomaly detection. Environment and Planning B: Planning and Design 2011, volume 38, pages 216-230 doi:10.1068/b36093 (<http://www.envplan.com/epb/fulltext/b38/b36093.pdf>).
 - Suggested that we organise a celebration of Stan's work to coincide with

GISRUK 2012 (maybe good to do something straight afterwards)

- [Claire Ellul](#) has offered to get me a copy of the STDM Proceedings tomorrow for my edification
 - We had a good chat about linked data although she remains sceptical that we will get all the data linked
 - We agreed that the main ways to link data was through space-time coincidence and through attributes with shared properties
- [Dawn Williams](#)
 - In on the blog action and keen to talk with [Nick Malleson](#) about crime geography
- [Christian Kreis](#)
 - Chat about clustering in space-time and attributes looking at how profiles of areas change over time
 - We thought about drug related crime patterns and how the fashion for different drugs over time would lead to different crime and policing
 - With Mikhail Kanevski we also talked about [Stan Openshaw](#)
 - Keen to talk with [Nick Malleson](#) about crime geography
- [Yihong Yuan](#)
 - I asked about [Mike Goodchild](#) and asked her to pass on my regards and say hello :-)
 - Yet another person keen to talk with [Nick Malleson](#) about crime geography
- [Muki Haklay](#)
 - In on the blog action, but I don't see a post about #geocomp11 ;-)
- Social at The Bree Louise
 - [Chris Brunsdon](#), [Alexis Comber](#), [Alex Singleton](#), [Shawn Laffan](#)
 - Good pub and good company :)

6. 2011-07-20 Notes

- Conference Opening
 - [Marek Ziebart](#)
- Keynote address: Digital Environments and 'RealWorld' Geographies
 - [Peter Nijkamp](#)
 - 1991 first GIS Conference anecdote
 - Castells: Everything is floating
 - The digital and physical collide
 - Abstract mathematical work on boolean algebra lays the foundation for digital analysis in the late 1800's and early 1900's in the UK
 - Theory free research: data avalanche
 - What about people in regional science? ([Torsten Hägerstrand](#))
 - Time-Space Cylinder
 - I can see this as more of a Time-Space Torus with a daily loop
 - Geography matters
 - [Emmanouil Tranos](#)
 - Tracking people and understanding flows
 - Who has the data and when can we use it?

- [Alexis Comber](#) makes a good suggestion :)
 - ...

- [Claire Ellul](#) came good on her promise of a copy of the STDM Proceedings :)
- 1A: Geodemographics
 - Creating Realistic Synthetic Populations at Varying Spatial Scales: a Comparative Critique of Population Synthesis Techniques
 - [Alison Heppenstall](#)
 - A micro-simulated population of Leeds
 - Feedback
 - How to update the population over time
 - I mentioned my work on-going from [GENESIS](#) in [NeISS](#) developing social simulation models that will scale to the largest available computational infrastructures
 - Doherty T., Skipsey S., [Turner A.G.D.](#), Watt J. (2011) '[A NeISS Collaboration to Develop and Use e-Infrastructure for Large-scale Social Simulation](#)'. Abstract submitted to the [UK e-Science All Hands Meeting 2011](#) and under review for full paper presentation.
 - The full paper and presentation and further work to follow...
 - Building Geodemographics on Parallel Graphics Processing Unit Architecture
 - [Muhammad Adnan](#)
 - The Use of Consensus Clustering in Geodemographics
 - [James Cheshire](#)
- 2A: Agent-Based Modelling (1)
 - Simulation of Cholera Diffusion to Compare Transmission Mechanisms
 - [Ellen-Wien Augustijn](#)
 - Feedback
 - It seems that both proximity and having waste sites upstream of water sources are correlated with the disease
 - It's time for mitigation...
 - Modified Navigation Algorithms in Agent-Based Modelling for Fire Evacuation Simulation
 - [Tyng-Rong Roan](#)
 - Feedback
 - The routing assumes that agents in the building know where the exits are which is often no the case...
 - Integrating an Agent-Based Model and a Population Microsimulation to Explore Crime Patterns
 - [Nick Malleson](#)
 - [NeISS](#)
 - <http://crimesim.blogspot.com/>
 - <http://geocrimedata.blogspot.com/>
 - Understanding Route Choice by Using Agent Based Simulation
 - [Ed Manley](#)
 - Feedback
 - Navigate by:
 - Green space - most pleasant route taking in the sights

- Least energy
- Safety
 - I let it be known I am keen to collaborate with this...
- Keeping options open
- Much navigation is to route around local traffic
- Taxi
 - [Addison Lee](#) fixed fare
 - Is there any incentive for taxi drivers not to take the best route for the passenger?
- Aesthetics
- Undulation and 3D
 - Importance of topology
 - Energy conservation/momentum
- Least angular choice will also be sensitive to the data resolution
- Route choice obviously very influenced by transport mode
- Momentum
- Time dependent - taxi driver routes will vary depending on time of day etc. How do taxi driver routes change over time
- Paying a premium and emergency routing

- Session 3A Space-Time Modelling and Analysis (1)
 - Where were you? A Time-geographic Approach to Activity Destination Reconstruction
 - [Mark Horner](#)
 - SimTraj: An Approach to Similar Queries over Trajectories Metric Spaces
 - [Fábio Afonso](#)
 - <http://www-ctp.di.fct.unl.pt/~fb/GeoComputation2011.pdf>
 - http://www-ctp.di.fct.unl.pt/~fb/gisruk2011_final.pdf
 - Measuring Population Shift Bias in Tests of Spatio-Temporal Interaction
 - [Nicholas Malizia](#)
 - Spatio-Temporal Analysis of Air Pollution Data in Malta
 - Luana Chetcuti Zammit
- Posters
 - Towards Using Geovisual Analytics to Interpret the Output of Geographically Weighted Discriminant Analysis
 - Demo of an ESDA system based on processing
 - [Peter Foley](#)
- Keynote: Does Visualization with Geocomputation Offer Anything We Didn't Know Already?
 - [Jo Wood](#)

7. 2011-07-21 Notes

- Session 5A Network Complexity Page
 - Road Network Analysis using Geometric Graphs of β -skeleton
 - [Toshihiro Osaragi](#)
 - The Head/tail Division Rule for Characterizing the Scaling of Geographic Space
 - [Bin Jiang](#)
 - Nice mention of [Stan Openshaw](#)
 - Distance Dependence in the Spatial Structure of China Aviation System: A Complex Network Perspective
 - [Jingyi Lin](#)
- Session 6A Machine Learning
 - Using a Moving Window SVMs Classification to Infer Travel Mode from GPS Data
 - [Adel Bolbol](#)
 - Putting the Geographical Analysis Machine on the Internet Revisited
 - [Andy Turner](#)
 - Microblogging pre-presentation slide sharing
 - Presentation slides for [#GeoComp11](#) <http://t.co/xRFJzax>
 - <http://twitter.com/#!/agdtturner/status/93987048444268544>
 - <http://identi.ca/notice/79348030>
 - [Presentation slides](#)
 - Feedback
 - Is it still computationally intensive?

- It can be
 - Resolution can be increased
 - Scale can increase up to global
 - However
 - Machines are now very fast
 - We should probably think about parallelisation revisited too :)
- Thumbs up from [Chris Brunsdon](#)
 - What more can you ask for :)
 - A pint maybe...
- Inverse Estimation of the Point Position from an Image of Kernel Density Estimation
 - [Atsushi Takizawa](#)
 - This uses a fixed bandwidth across the map rather than varying the bandwidth depending on the distribution of points
 - Feedback
 - [Chris Brunsdon](#) is aware of others using the variable bandwidth approach
 - I used this for analysing road accident incidence data over time
 - With a variable bandwidth to the kth nearest point, then there are no regions of the map that do not get values, which can make it easier to difference spatial patterns over time
 - Indeed my [Geographically Weighted Statistics](#) package is useful for this...
- Kernel Regression for Traffic Prediction Under Missing Data
 - [James Haworth](#)
 - Feedback
 - [Chris Brunsdon](#) suggested working on confidence intervals
 - James is already looking into [jackknifing](#)

- Chat with [Zbynek Janoska](#)
 - Using space-time attribute analysers (Geographically Weighted Statistics) to analyse road safety and road traffic accident incidence data over time
 - Zbynek works in a small team of mainly geographers in the Czech Republic Transport Research Centre.
 - The Head of Department of Geoinformatics is [Michal Bil](#).
 - They are keen to apply methods to analyse their data and to collect better data with more comprehensive details about road safety and the road environment
 - We plan to collaborate and maybe look to this as the start of the story and the initiation of a network for getting European Union funding for improving road safety through research, analysis and mitigation via the European Commission
 - ...
- Chat with [Jamison Conley](#) now at West Virginia University, but who worked with James, Ian and [Mark Gahegan](#) at Penn State
 - Jamison developed a cluster detection tool similar to Cluster in 2004
 - Conley J.F., Gahegan M., Macgill J.R. (2005) A genetic approach to detecting clusters in point datasets. Geographical Analysis, volume 37, pages 286-314.
 - Now working on toxic pollution
 - Conley J.F. (2011). Estimation of exposure to toxic releases using spatial interaction modeling. International Journal of Health Geographics, volume 10, number 20 (<http://www.ij-healthgeographics.com/content/10/1/20>).
- Chat with [Alexis Comber](#)
 - Saving lives with real time location management for emergency service vehicles. It is possible to show how much they have improved response times and estimate lives saved. Now that's what I call an impact metric :)
- Session 7A Geographically Weighted Regression (GWR)
 - Model Selection in GWR: the Development of a Flexible Bandwidth GWR
 - Wenbai Yang
 - Feedback
 - Linda See (session chair) asks if it can all be optimised with a genetic algorithm
 - Partial Mutual Information approach can help with the a reduction of attributes
 - PMI used in hydrology
 - Spatial planning - an inverse problem?
 - [Ricardo Crespo](#)
 - Inverse problem approach
 - Have an idea of where you want to be and then figure out the steps backwards as to how to get there until you arrive at where you are...
 - A Spatial Analysis of Perceptions of Health Services Accessibility, Health Status and Geographic Access using GWR
 - [Alexis Comber](#)

- Analysis on the back burner
 - It would be done better if funded properly ;-)
- Distance Metric Selection for Calibrating a Geographically Weighted Regression model
 - [Binbin Lu](#)
 - Feedback
 - Continuous and boolean boundaries hard

- Recent Developments in Geographically Weighted Regression
 - [Stewart Fotheringham](#)
 - Next Steps
 - Flexible bandwidth GWR
 - Space-time GWR
 - Geographically Weighted Spatial Interaction Models
 - Feedback
 - I suggested torus type weighting for GWR
 - So at distance zero we start monotonically increasing to a maximum weighting at a distance (focus of the scale) and then monotonically decrease the weighting back to zero at a maximum distance
 - A simplified form of this is to start with a maximum weight at distance zero and monotonically decrease (this is currently more commonly used)
 - Fotheringham et al. GWR users are unable to configure such a weighting function, unless they can get the source code and refactor it, but it is something that can be done with my [Geographically Weighted Statistics](#)
 - GWS
- [LinkedIn](#) status update
 - Enjoying Geocomputation 2011 and blogging via: <http://bit.ly/nIKMyB>
- Session 8A Location-based Services Page
 - Dynamic Planning of Ambulance Location in Leicestershire
 - Emeka Chukwusa
 - Feedback
 - Dynamic re-allocation and covering for
 - Original developer of Hypercube approach wants feedback
 - Location strategy based on similar past conditions
 -
 - Chat with [Clio Andris](#)
 - I study road safety via the mapping and analysis of personal injury road accident incidence in Great Britain. The pattern varies spatially and temporally and with the road and weather conditions. You can position emergency services for typical days or based on the type of day, so for instance on Christmas day, the pattern of accidents is more like it was the year before, but it also depends on the weather conditions etc...
 - Locating-allocating Schools Using Metaheuristics and GIS
 - [Raul Zurita-Milla](#)
 - A New Variable for Spatial Accessibility Measurement in Social Infrastructure Planning
 - [Yang Li](#)
- Have fun on the boat :)
- ...

8. 2011-07-22 Notes

- Session 9B Applications (2)
 - Using Fine Resolution Population Data and Spatial Interaction Modeling to Estimate Risk from Airborne Toxic Releases
 - [Jamison Conley](#)
 - Lung cancer mortality 1997-2008
 - Self reported release data 1997-2007
 - Airborne toxic particulates
 - USA LandScan 90 metre resolution population data (daytime and night-time)
 - Feedback
 - Smoking is a big part of this
 - The pollution data is incomplete and this is only a proxy for the concentration of cancer agents only partially solved with better dispersion models
 - There is a need for sampling and measuring the air quality nationwide
 - People are moving around, so measuring their exposure is also hard
 - Defining Spatial Weights Matrices in Ecological Research
 - [Colin Robertson](#)
 - Feedback
 - Could do with using specialist geomorphometrics for insect dispersal
 - Geometric Techniques to Speed up Geospatial Feature Matching
 - [Constantinos Tsirogiannis](#)
 - Conflation explained
 - Assumes the same number of points in each data to be combined
 - n square problem does not scale so needs to be re-thought
 - Reduce the problem by only consider nearby points for matching
 - <http://www.cgal.org/>
 - Feedback
 - What application can we think of for one-to-one correspondence?
 - Pattern recognition from imagery with edge and point matching
 - This is often solved by moving to a higher dimensional plane and projecting this back
 - How to resolve that two different communication channels are emitted from the same location?
 - Identity resolution with a spatial component
 - Map warping
 - It is easier to think about interpolating and generalising to get correspondence or a joint view or agreement

- Constantinos is finishing a PhD based in computer science on algorithms
- [Berk Anbaroglu](#)
- Games and higher dimensions are important
 - <http://www.akaturner.net/andy/games>

- The Future of GeoComputation
 - [Keith Clarke](#)
 - Geography is a science
 - Computer science is an art
 - Mathematics rules
 - We are all mapping now Godel :-)
 - Bring on automation and the next generation algorithms
 - The birth of CORONA and top down remote sensing
 - Our friends in the military :)
 - Looking to the future
 - A vision for 2061
 - I wish that [Stan Openshaw](#) would make a come back by then ;-)
 - Keith is probably right though that we need to look to the next generation of researchers as we may not get the chance to live vastly extended lives...
 - Feedback
 - We will increasingly want to know something about everything and everything about somethings
 - Digital identity
 - Future prediction
 - [Permutation City](#)
 - Greg Egan
 - Written in 1994, this is a very good scientific science fiction
 - Shaping the future
 - How do we do it?
 - Get rid of disciplines :-)
 - Change our universities
- Conference closing
 - [Tao Cheng](#)
 - Linking it all together beautifully :)
 - GeoComputation 2013 in Wuhan China
 - Jianya Gong
 - gongiy@whu.edu.cn
 - <http://www.lmars.whu.edu.cn>
 - Huayi Wu
 - wuhuayi@whu.edu.cn
 - I want to go...
 - Suggested date 2013-05-20 to 2013-05-22
 - There are photo's online :-)
 - Final chat with [Berk Anbaroglu](#)
 - The Player of Games
 - Ian M. Banks
 - http://en.wikipedia.org/wiki/The_Player_of_Games
 - <http://dev8d.org/>

- <http://devcsi.ukoln.ac.uk/blog/about/>
 - Final chat with [Christian Kreis](#)
 - Time to start developing or getting involved in an EC funded criminology project
- Onto [Smithy's](#) where I will be until late if anyone would like to join me and my friends

9. Miscellaneous Notes

- Journal special issues...
- Browsing
 - https://docs.google.com/document/d/1FlzLhD3KVioVmcHq9ZTud4LwkaTfeg_exjclwFWydcM/edit?hl=en_US